IN THE CLAIMS:

1. (Currently Amended) A method, in a data processing system, for determining configuration parameter value settings for a computing device to optimize an operational characteristic of the computing device, comprising:

obtaining a simplex of points, wherein each point in the simplex represents a set of configuration parameters for the computing device;

assigning an upper threshold and a lower threshold to a size of the simplex of points;

performing a geometric transformation on the simplex of points to identify a new point to investigate, wherein if one or more of a configuration parameter values associated with the new point violates one of the upper threshold and lower threshold, the new point is mapped to a point closest to the new point whose associated configuration parameter values satisfy the upper threshold or lower threshold, the point closest to the new point then becoming the new point;

converting the configuration parameter values associated with the new point to one of integer and real values based on a value type for the configuration parameters;

checking the converted configuration parameter values to determine if a dimensionality of the simplex is changed by converting of the configuration parameters;

responsive to determining that the dimensionality of the simplex is changed, setting the converted configuration parameter values to converted configuration parameter values that equal the converted configuration parameter values minus a penalty value, wherein the penalty value is a quadratic function of a distance between an original configuration parameter value of the new point and the converted configuration parameter value;

sampling the operational characteristic at the new point;

determining if the operational characteristic associated with the new point is worse than a value of the operational characteristic for each point in the simplex of points;

determining a set of points in the simplex that need to be resampled if the new point is worse than a value of the operational characteristic for each point [[int he]] in the simplex of points, wherein the set of points comprises a best point in the simplex of points;

resampling the operational characteristic at each of the points in the set of points; [[and]]

determining whether to expand or contract the simplex based on the resampling of the operational characteristic at the best point in the simplex of points to obtain a new simplex based on the resampled operational characteristic of points in the set of points[[.]], the determination including comparing a resampled operational characteristic value for the best point to a previous operational characteristic value for the best point, and determining whether to expand or contract the simplex based on a difference

between the resampled operational characteristic value and the previous operational characteristic value, wherein if the difference is greater than a threshold, the simplex is expanded, and wherein if the difference is not greater than a threshold, then the simplex is contracted;

limiting expansion or contraction of the simplex based on the assigned upper and lower thresholds;

obtaining a new simplex by extending the simplex in a direction of the new point if the operational characteristic of the new point is better than values of the operational characteristic for each point in the simplex of points; and

using configuration parameter values of the best point in the simplex to configure the computing device if no improvement of the simplex is obtainable.

2-35. (Canceled)